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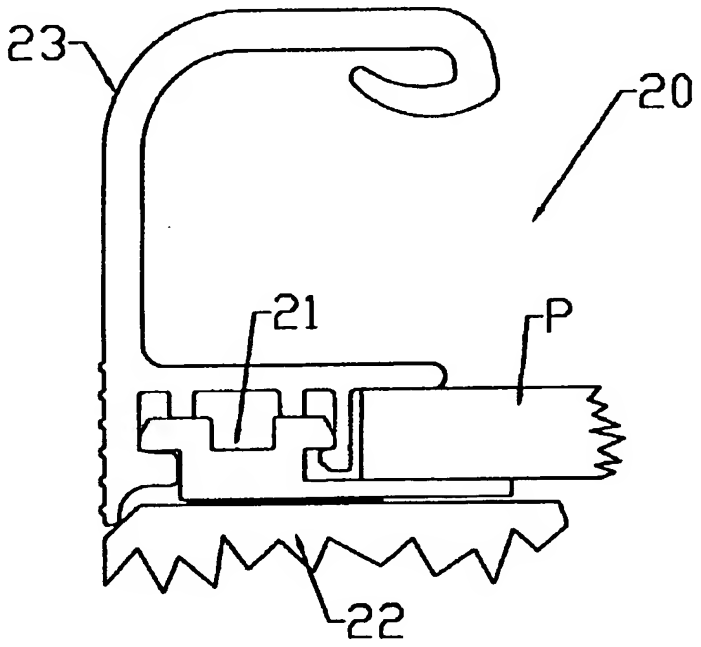
(54) Titre : ASSEMBLAGE DE POIGNEE A RACCORDEMENT RAPIDE
(54) Title: QUICK-CONNECT HANDLE ASSEMBLY



(57) Abrégé/Abstract:
An improved handle assembly (20) is adapted to be mounted on an object. The improved handle assembly has an elongated track (21) adapted to be mounted on the object (22), and a handle (23) that is adapted to be removably mounted on the track. The track has a first surface (24) adapted to face toward the object, has a second surface (25) adapted to face away from the object, and has a pair of laterally- and outwardly-extending lugs (30, 31). At least one of the lugs (31) is longitudinally interrupted by the presence of a series of intermediate gaps (85) at a plurality of spaced locations therealong. The handle has a base portion (45) and a graspable portion (46). The base portion is adapted to be mounted on the track for movement relative thereto in a longitudinal direction. The base has a bearing surface (84) arranged to engage the track second surface, has a recess (81, 82) arranged to receive one of the lugs, and has a plurality of hook portions (78). The hook portions are longitudinally interrupted by gaps (86) at a plurality of spaced locations therealong. The handle may be selectively moved in longitudinal direction relative to the track between a locked position at which the hook portions are transversely aligned with the other lugs, and an unlocked position at which at the hook portions are aligned with the track gaps.

QUICK-CONNECT HANDLE ASSEMBLY

Abstract

An improved handle assembly (20) is adapted to be mounted on an object. The improved handle assembly has an elongated track (21) adapted to be mounted on the object (22), and a handle (23) that is adapted to be removably mounted on the track. The track has a first surface (24) adapted to face toward the object, has a second surface (25) adapted to face away from the object, and has a pair of laterally- and outwardly-extending lugs (30, 31). At least one of the lugs (31) is longitudinally interrupted by the presence of a series of intermediate gaps (85) at a plurality of spaced locations therealong. The handle has a base portion (45) and a graspable portion (46). The base portion is adapted to be mounted on the track for movement relative thereto in a longitudinal direction. The base has a bearing surface (84) arranged to engage the track second surface, has a recess (81, 82) arranged to receive one of the lugs, and has a plurality of hook portions (78). The hook portions are longitudinally interrupted by gaps (86) at a plurality of spaced locations therealong. The handle may be selectively moved in longitudinal direction relative to the track between a locked position at which the hook portions are transversely aligned with the other lugs, and an unlocked position at which at the hook portions are aligned with the track gaps.

QUICK-CONNECT HANDLE ASSEMBLY

Technical Field

The present invention relates generally to an improved handle assembly, and, more particularly, to an improved quick-connect handle assembly which is particularly suited for use on a refrigerator door, a cabinet door, a drawer, or the like.

Background Art

Certain appliances, such as household refrigerators, exist in a variety of physical styles and colors. Some have an enameled finish, while others have a simulated wood-grained finish. The various handles that are typically mounted on the refrigerator and freezer compartment doors have decorative attributes, and are changed from time-to-time. In some cases, it is desired to provide a continuous vertically-elongated handle that may be grasped anywhere along its longitudinal extent.

In any event, there has been a problem in attaching such hardware to refrigerator and freezer doors. This is particularly true since may refrigerators have decorative or simulative panels that can be added in the field. Hence, door hardware which is initially installed at the factory may have to be removed in the field. After a decorative panel has been put on, the hardware may have to be remounted.

Upon information and belief, existing door hardware formed of aluminum extrusions may cost on the order of $15 per handle. Hence, if there is a refrigerator compartment and a freezer compartment, there would typically be two door handles, for an aggregate cost of about $30 per refrigerator. Moreover, if one or both of these handles has to be removed in the field to allow for the addition of an appropriate decorative panel and then remounted, there is the increased opportunity for mishandling and breakage.

Upon information and belief, prior continuous aluminum-extruded door pulls are provided with a plurality of key holes that must be aligned with certain headed fasteners mounted on the door. This is somewhat analogous to the manner by which a wall-mounted telephone is supported. Experience has shown that some people, frustrated with one thing or another, will apply excess force to the handles, increasing damage and breakage.

In still other cases, the panel-like surface of the refrigerator door is, in fact, not planar, but may have a wavy or undulating shape. If the door hardware is formed of a relatively-rigid aluminum extrusion, the non-planar nature of the door handle may become immediately apparent, and indeed be exaggerated, when placed next to the extrusion.

Accordingly, it would be desirable to provided an improved door handle that would reduce the cost, facilitate insertion and removal, be used to hold a decorative panel or plate, and overcome the other aforesaid deficiencies in the prior art.

Disclosure of the Invention

With parenthetical reference to the corresponding parts, portions, or surfaces of the disclosed embodiment, merely for purposes of illustration and not by way of limitation, the present invention broadly provides an improved handle assembly (20) that is adapted to be mounted on an object (22). In the following description, the object will be described as being a refrigerator door. However, the improved handle assembly could be mounted on other types of objects, such as drawers, cabinet doors, and other types of doors as well. Accordingly, all these forms, as well as unnamed others, are contemplated by the use of the generic word "object" in the appended claims.

The improved handle assembly broadly includes an elongated track (21) that is adapted to be mounted on the object. The track has a first surface (24) that is adapted to face toward the object, has a second surface (25) that is adapted to face away from the object, and has a pair of laterally- and outwardly-extending lugs (30, 31). At least one of the lugs (31) is longitudinally interrupted by the series of gaps or spaces (85) at a plurality of locations spaced therealong.

The improved assembly also includes a handle (23) having a base portion (45) and having a graspable portion (46). The base portion is adapted to be mounted on the track for movement relative thereto in a longitudinal direction. The base has a bearing surface (85) that is arranged to engage the track second surface (25). The base also has a recess (81, 82) that is adapted to receive one of the lugs, and has a plurality of hook portions (78). These hooks portions are longitudinally interrupted by gaps or spaces (86) at a plurality of locations spaced therealong.

In the improved handle assembly, the handle may be selectively moved in a longitudinal direction relative to the track between a locked position, at which the hook

portions (78) are transversely aligned with the track lugs (31), and an unlocked position at which the hook portions are aligned with the gaps between the track lugs.

One unique feature of the invention is that after the track has been mounted on the object, the handle may simply be pivotally snapped into engagement with the track regardless of the axial orientation of the hook portions and spaces. On the other hand, to remove the handle, the operator must first shift the handle longitudinally relative to the track until the hook portions on the handle (78) are aligned with the spaces or gaps (86) between the track lugs. Once so aligned, the handle may be pivotally disengaged from the track. As indicated above, the handle may be simply snapped back into engagement with the track, or one could, alternatively, simply reverse the steps described for removal, and first align the handle hook members with the track gaps, pivotally move the hook back into engagement, and then longitudinally shift the handle relative to the track to lock the handle and track together.

In the preferred embodiment, an adhesive (43) is placed between the track first surface and the object. In addition to this, a plurality of fasteners may be used to secure the track to the object. The track base portion is relatively rigid, but the hook portions are relatively flexible and may flex or deform into and out of engagement with the associated track lug. The track is preferably formed integrally of a suitable rigid thermoplastic or thermosetting material. Similarly, the handle is preferably formed integrally, such as of a suitable rigid thermoplastic or thermosetting material.

In the preferred embodiment, the handle and track are so configured and arranged as to leave a space therebetween when the handle is mounted on the track. This space (69, 78, 41), which simulates a blind recess, is adapted to receive the marginal end portion of a decorative panel *P* that may be mounted on the object. Thus, in addition to providing a handle assembly, the improved device may actually serve to hold the decorative or simulative panel to the object.

Accordingly, the general object of the present invention is to provide an improved handle assembly.

Another object is to provide an improved handle assembly for a door or drawer.

Another object is to provide an improved quick-connect handle assembly which is particularly suited for use on refrigerator door, particularly of the type that may be

cosmetically changed or modified in the field by the addition of decorative or simulative panels.

Still another object is to provide an improved handle assembly which may be quickly snapped into engagement with a track portion, and which has an improved locking means to facilitate separation of the handle from the track in the field.

These and other objects and advantages will become apparent from the foregoing and ongoing written specification, the drawings, and the appended claims.

Brief Description of the Drawings

Fig. 1 is a fragmentary transverse horizontal sectional view (with cross-hatching omitted for clarity of illustration) of the improved handle assembly, with the handle shown as being operatively engaged with the track.

Fig. 2 is an enlarged transverse horizontal sectional view of the track shown in Fig. 1.

Fig. 3 is an enlarged transverse horizontal sectional view of the handle shown in Fig. 1.

Fig. 4 is a reduced-scale bottom plan view of the handle shown in Fig. 1.

Fig. 5 is a reduced-scale top plan view of the track shown in Fig. 1

Description of the Preferred Embodiments

At the outset, it should be clearly understood that like reference numerals are intended to identify the same structural elements, portions or surfaces, consistently throughout the several drawing figures, as such elements, portions or surfaces may be further described or explained by the entire written specification, of which this detailed description is an integral part. Unless otherwise indicated, the drawings are intended to be read (*e.g.*, cross-hatching, arrangement of parts, proportion, degree, etc.) together with the specification, and are to be considered a portion of the entire written description of this invention. As used in the following description, the terms "horizontal", "vertical", "left", "right", "up" and "down", as well as adjectival and adverbial derivatives thereof (*e.g.*, "horizontally", "rightwardly", "upwardly", etc.), simply refer to the orientation of the illustrated structure as the particular drawing figure faces the reader. Similarly, the

terms "inwardly" and "outwardly" generally refer to the orientation of a surface relative to its axis or elongation, or axis of rotation, as appropriate.

Referring now to the drawings, this invention provides an improved handle assembly of which a presently preferred embodiment is generally indicated at 20. The improved handle assembly is shown as broadly including a track 21 which is adapted to be mounted on a suitable object, schematically indicated at 22 in Fig. 1. The improved assembly also includes a handle, generally indicated at 23, that is adapted to be removably mounted on the track, and, in this manner, selectively secured to the object. In the disclosed embodiment, the object 22 is shown as being a marginal end portion of a door, such as a refrigerator door. Referring now to Fig. 2, track 21 is shown as being a vertically-elongated specially-configured member having a planar vertical first surface 24 that is adapted to face toward the object, and a planar vertical second surface 25 that is arranged to face away from the object. A vertical slot-like recess extends into the track member from second surface 25. This recess is bounded by a rightwardly-facing planar surface 26, an upwardly-facing planar surface 28, and a leftwardly-facing planar surface 29. A pair of left and right lugs, 30, 31, respectively, extend laterally outwardly from the track member adjacent upper surface 25. Each of these lugs appears to be symmetrical about the transverse vertical axis of recess 26, 28, 29, when seen in transverse cross-section. Thus, the leftward lug 30 is bounded by a leftwardly-inclined planar surface 32, a leftwardly-facing planar surface 33, a downwardly-facing planar surface 34, and a leftwardly-facing planar surface 35 continuing downwardly therefrom to join the left margin of first surface 24. Similarly, right lug 31 is sequentially bounded by a rightwardly-facing inclined surface 36, a rightwardly-facing surface 38, a downwardly-facing planar surface 39, and a rightwardly-facing planar surface 40. An upwardly-facing planar surface 41 extends rightwardly from the lower margin of surface 40, and a rightwardly-facing planar surface 42 continues downwardly therefrom to join the right margin of first surface 24. A suitable adhesive, generally indicated at 43, is mounted on track first surface 24 immediately beneath the hook-recess-hook portion to facilitate attachment of the track to the object. The track is also shown as having a plurality of vertically-spaced holes, severally indicated at 44, to receive and accommodate passage of a corresponding plurality of fasteners (not shown) by means of which the track may

be mounted on the object. The track is preferably formed integrally of a suitable thermoplastic or thermosetting plastic material, or the like.

Referring now to Fig. 3, handle 23 is shown as having a lower base portion 45 and an upper handle portion 46 extending upwardly therefrom and terminating in a reversely-curved marginal end portion 48. More particularly, this handle is shown as being bounded by a downwardly-facing planar surface 49, a leftwardly-facing planar surface 50, an upwardly- and rightwardly-extending convex surface 51, an upwardly-facing planar surface 52, an upwardly- and rightwardly-facing arcuate surface 53, a planar surface 54, a downwardly- and rightwardly-facing convex surface 55, a downwardly- and leftwardly-facing arcuate surface 56 joining a tip 58, an upwardly-facing concave surface 59, a leftwardly-facing planar surface 60, a concave arcuate surface 61, a downwardly-facing planar surface 62, a concave surface 63, a rightwardly-facing planar surface 64, a concave surface 65, an upwardly-facing planar surface 66, a rounded end surface 68, a downwardly-facing planar surface 69, a rightwardly-facing planar surface 70, an upwardly- and rightwardly-facing planar surface 71, an upwardly-facing surface 72, a rightwardly-facing planar surface 73, a downwardly-facing planar surface 74, and a concave surface 75 continuing therefrom to join the right margin of surface 49. If desired, a plurality of ribs, severally indicated at 76, may extend outwardly from handle surface 50 at various spaced locations therealong. These ribs are largely decorative, and can be readily eliminated if desired. A plurality of longitudinally-spaced hooks, severally indicated at 78, are shown as extending downwardly from surface 69 so as to engage the rightward interrupted lug 31. Each hook, which is also formed integrally with the handle, has a flexible web portion 79 extending downwardly from surface 69, and terminates in an enlarged hook portion 80 at its lower distal end. The hook is bounded, in pertinent part, by leftwardly-facing planar web surface 81, and upwardly-facing hook surface 82.

In the preferred form, two integrally-formed lugs, severally indicated at 83, extend downwardly from handle surface 69. These two lugs are transversely spaced from one another, but extend longitudinally of the handle. Each lug terminates in a downwardly-facing end face or surface 84. Lug surfaces 84, 84 are arranged to bear against track surfaces 25, 25.

As best shown in Fig. 5, the track member right lug 31 is not continuous along its longitudinally extent, but is interrupted by a plurality of spaces, severally indicated at 86.

Thus, whereas the track left lug 30 may be continuous along its longitudinal extent, the right lug 31 is simulated by a plurality of alternating lugs and spaces along its longitudinal extent. Similarly, the hook member 78 on the handle is not continuous along its longitudinal extent. Rather, there are a plurality of hook members that are longitudinally spaced or separated from one another by a plurality of spaces, severally indicated at 85, as shown in Fig. 4. The hook member spaces are cooperatively arranged with respect to the track right lug spaces 86 for a purpose hereinafter apparent.

To mount the device on an object, the adhesive surface is first pressed against the object surface and appropriate screws or fasteners are passed through holes 44 so as to securely hold the track member to the object. Thereafter, the handle is first oriented such that the leftward lug 30 is received in the recess defined by handle surfaces 72, 71, 70 and 69. The handle member is then pivoted about this point of contact in a clockwise direction until the hook member snaps into engagement with the track right lugs 31. This presupposes that the handle has been vertically aligned with respect to the tracks such that the hook portions 78 are aligned with the interrupted lugs 31, as opposed to the spaces therebetween. Thus, the handle may be simply pivotally snapped into engagement with the track.

To remove the handle from the track, the handle is first shifted longitudinally relative to the track until such time as the hook portions 78 become aligned with the slots between the interrupted track lugs 31. Thereafter, the handle may be pivoted in a counterclockwise direction about the nose of left lug 30, to facilitate separation of the handle from the track. It should also be noticed that the distal ends of lugs 83 bear against track surfaces 25. The handle may be formed integrally of a suitable thermoplastic or thermosetting material.

Thus, the invention provides an improved handle assembly that is adapted to be mounted on object. The improved handle assembly has an elongated track 21 that is adapted to be mounted on the object, and a handle 23 that is adapted to be removably mounted on the track. The handle may be selectively moved to a longitudinal position relative to the track between a lock position at which the hook portions are transversely aligned with the right lugs 31, and an unlocked position at which the hook portions are aligned with the gaps between these hook portions. One unique feature of the invention is that the handle may simply be moved pivotally relative to the track until hook portion

78 snaps into engagement with the right lugs. Moreover, when the handle is mounted on the track, the handle assembly may be used to hold a marginal end portion of a decorative panel *P* to the object, as shown in Fig. 1.

Modifications

The present invention provides that many changes and modifications may be made. For example, the particular materials of construction are not deemed to be particularly critical, and may be varied as necessary. The leftward track lug 30 may be continuous or interrupted. The ribs 76 on the handle may be eliminated. The configuration of the graspable portion of the handle may also be changed. The presence of the mounting holes and/or adhesive may be varied, as desired. The hook member 78 may take other shapes and configurations as well. While the preferred embodiment is shown as having two lugs 83, a greater or lesser number may be alternatively provided. As indicated above, the present invention is not limited to use with a refrigerator door, but may be used generally as a door handle or drawer pull, as appropriate. The materials of construction are not deemed to be particularly critical, and may be readily changed or modified, as desired. In the preferred form, the handle is formed of an ABS plastic material, and the track is formed of a rigid PVC plastic material

Therefore, while the preferred form of the present invention has been shown and described, and various additional changes and modifications thereof discussed, persons skilled in this art will readily appreciate that various additional changes and modifications may be made without departing from the spirit of the invention, as defined and differentiated by the following claims.

Claims

What is claimed is:

1. A handle assembly adapted to be mounted on an object, comprising:

an elongated track adapted to be mounted on said object, said track having a first surface adapted to face toward said object, having a second surface adapted to face away from said object, and having a pair of laterally- and outwardly-extending lugs, at least one of said lugs being longitudinally interrupted by gaps at a plurality of spaced locations therealong; and

a handle having a base portion and having a graspable portion, said base portion being adapted to be mounted on said track for movement relative thereto in a longitudinal direction, said base having a bearing surface arranged to engage said track second surface, having one recess adapted to receive one of said lugs, having a plurality of hook portions, said hook portions longitudinally interrupted by gaps at a plurality of spaced locations therealong;

and wherein said handle may be selectively moved in a longitudinal direction relative to said track between a locked position at which said hook portions are transversely aligned with said other lugs, and an unlocked position at which said hook portions are aligned with said track gaps.

2. A handle assembly as set forth in claim 1 and further comprising an adhesive between said track first surface and said object.

3. A handle assembly as set forth in claim 1 and further comprising at least one fastener for securing said track to said object.

4. A handle assembly as set forth in claim 1 wherein said track has two of said first surfaces.

5. A handle assembly as set forth in claim 1 wherein said base portion is relatively rigid and said hook portions are relatively flexible.

6. A handle assembly as set forth in claim 1 wherein said track is formed integrally.

7. A handle assembly as set forth in claim 6 wherein said track is formed of a thermoplastic or thermosetting plastic material.

8. A handle assembly as set forth in claim 1 wherein said handle is formed integrally.

9. A handle assembly as set forth in claim 8 wherein said handle is formed of rigid thermoplastic or thermosetting plastic material.

10. A handle assembly as set forth in claim 1 wherein said track has a surface arranged to be spaced from the distal end of said hook portions when said handle is mounted on said track.

11. A handle assembly as set forth in claim 10 wherein a decorative panel is mounted on said object and has a marginal end portion received in said space.

12. A handle assembly as set forth in claim 1 wherein said handle may be pivotally snapped into engagement with said track when said handle is in said locked position.

13. A handle assembly as set forth in claim1 wherein said handle may be pivotally separated from said track when said handle is in said unlocked position.

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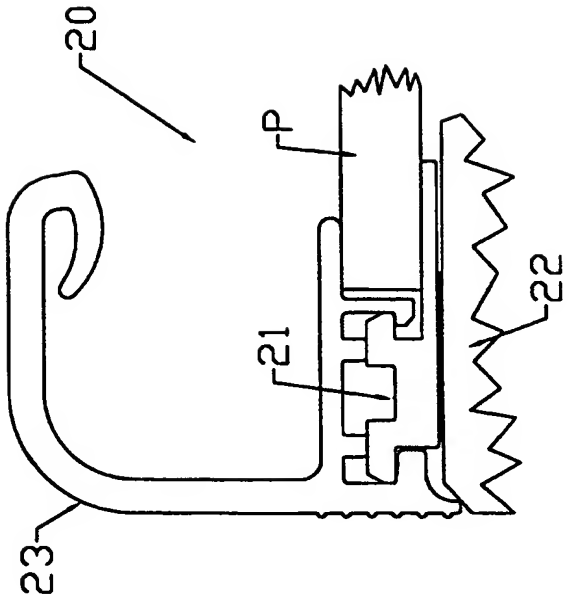

Fig. 1

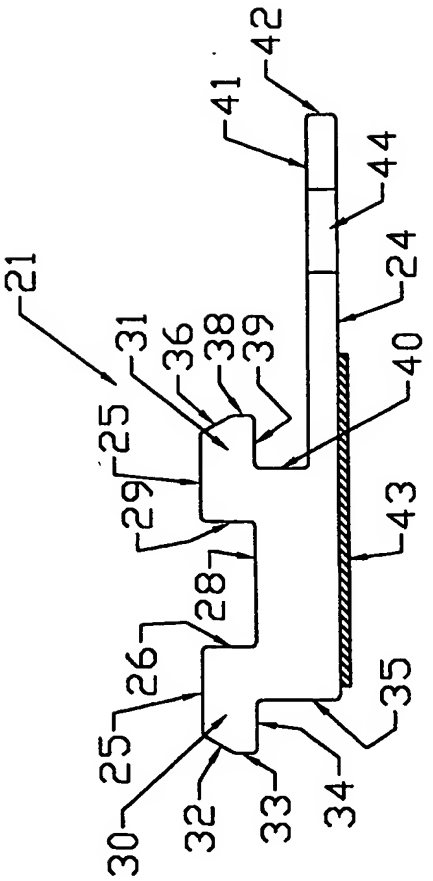

Fig. 2

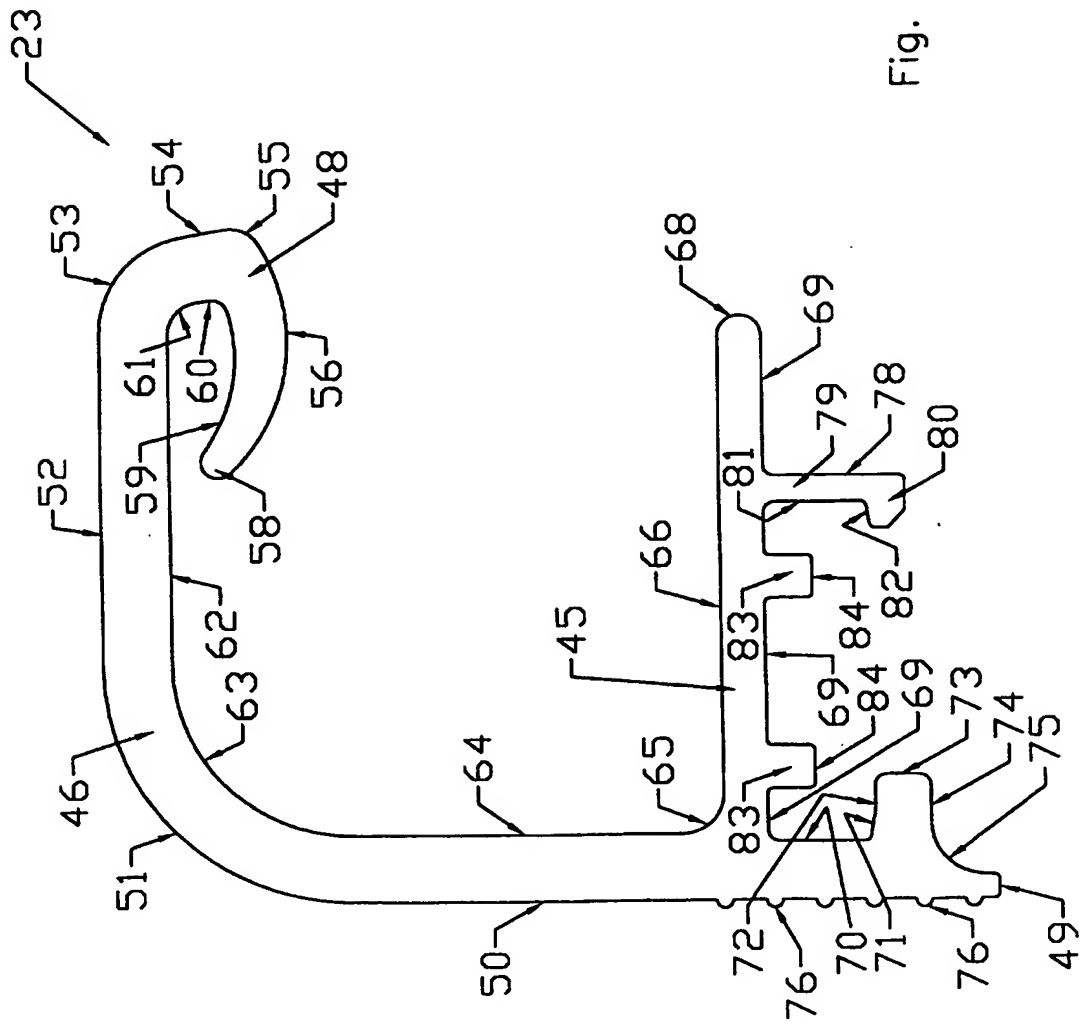
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Fig. 3

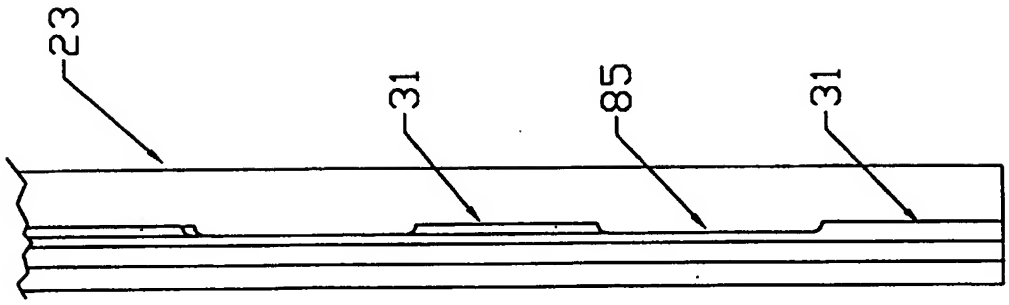


Fig. 4

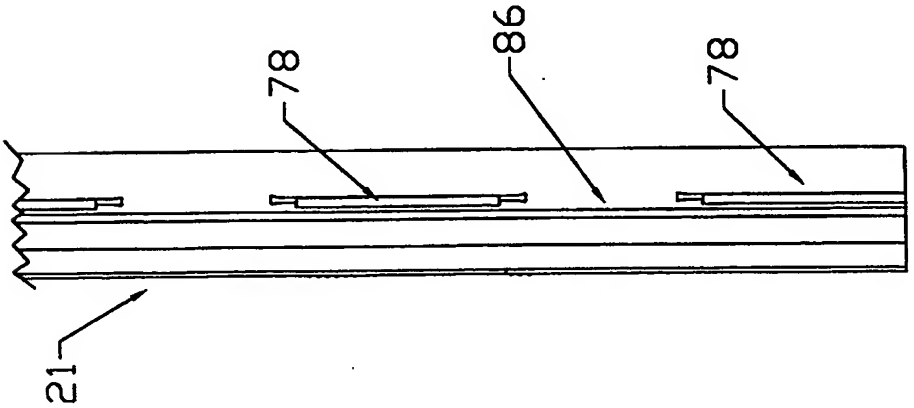
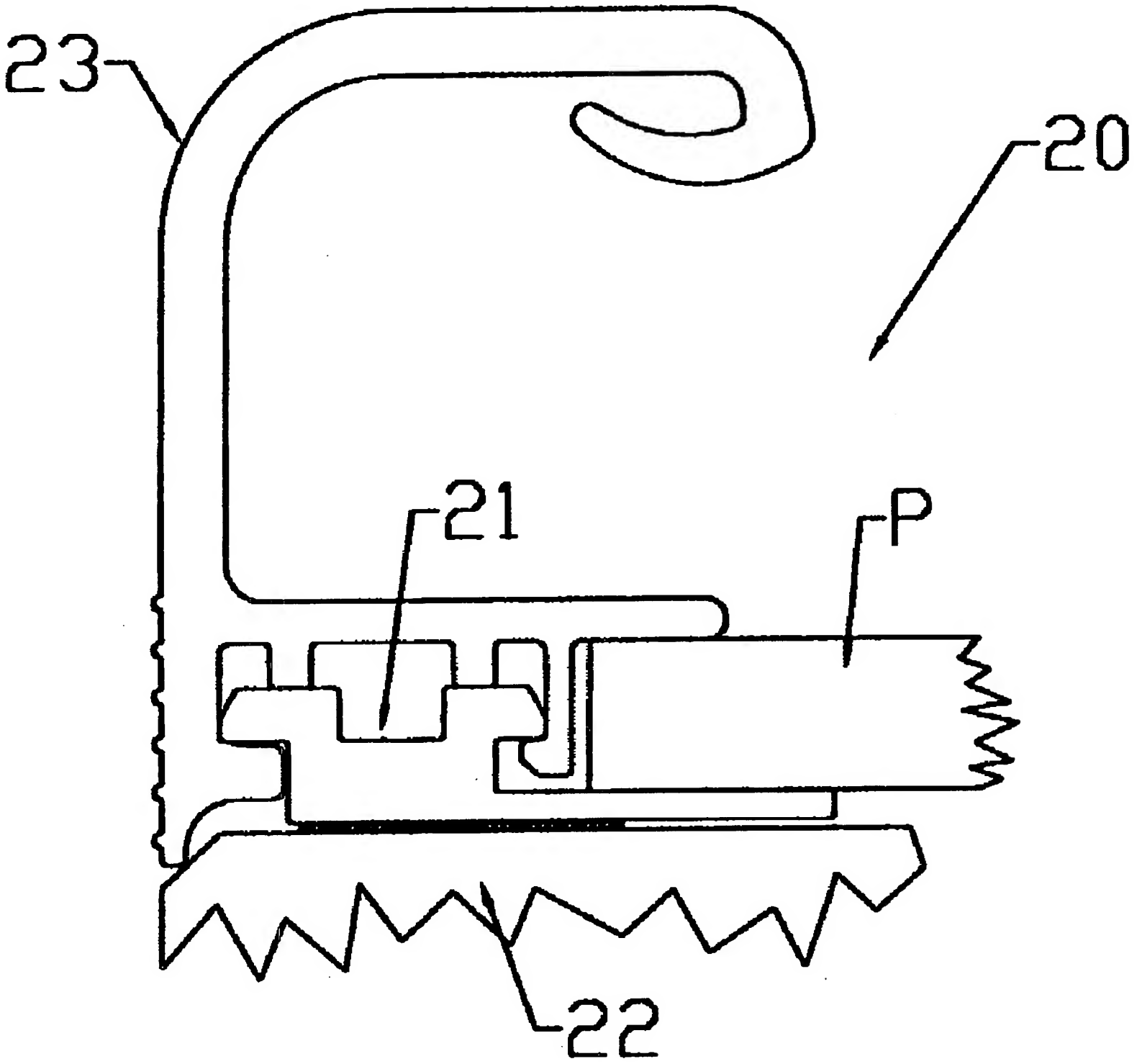


Fig. 5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DERWENT-ACC-NO: 2002-330521

DERWENT-WEEK: 200237

TITLE: assembly for e.g. a has a track with extending lugs, and a whose base portion has a recess to receive one of the lugs, and a number of hook portions

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PATENT-ASSIGNEE: CPI PLASTICS GROUP LTD[CPIPN]

PRIORITY-DATA: 2000US-0643779 (August 22, 2000)

PATENT-FAMILY:

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APPLICATION-DATA:

PUB-NO	APPL-DESCRIPTOR	APPL-NO	APPL-DATE
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INT-CL (IPC): E05B001/00, F25D023/00

ABSTRACTED-PUB-NO: CA 2354931A

BASIC-ABSTRACT:

NOVELTY - The assembly has a track (21) mounted on the object (22), and a (23) removably mounted on the track. The track has a pair of laterally and outwardly extending lugs. At least one of the lugs is longitudinally interrupted by a series of spaced intermediate gaps. The base portion is mounted on the track for movement relative to it in a longitudinal direction. The base portion has a bearing surface engaging the

track second surface, has a recess to receive one of the lugs, and has a number
of hook portions.

DETAILED DESCRIPTION - The hook portions are longitudinally interrupted by gaps
at a number of spaced locations along it. The may be selectively moved
in longitudinal direction relative to the track between a locked position at
which the hook portions are transversely aligned with the other lugs, and an
unlocked position at which at the hook portions are aligned with the track
gaps. The track and are formed from thermoplastic or thermosetting
plastic material.

USE - As a or cabinet drawer, e.t.c., which is
positioned vertically and may be grasped anywhere along its length.

ADVANTAGE - Has reduced costs, easier insertion and removal, and can be used to
hold a decorative or plate.

DESCRIPTION OF DRAWING(S) - The figure shows a fragmentary transverse horizontal section view of the assembly.

longitudinal track 21

object 22

23

decorative P

CHOSEN-DRAWING: Dwg.1/5

TITLE-TERMS: ASSEMBLE REFRIGERATE TRACK EXTEND LUG BASE PORTION
RECESS RECEIVE ONE LUG NUMBER HOOK PORTION

DERWENT-CLASS: Q47 Q75 X27

EPI-CODES: X27-F01;

SECONDARY-ACC-NO:
Non-CPI Secondary Accession Numbers: N2002-259389